LAMPIRAN A

HASIL UJI MUTU FISIK GRANUL

Mutu fisik yang diuji	*Batch*	Di Uji	Formula Tablet Parasetamol				Persyaratan
			FA	FB	FC	FD	
Kadar air (persen)	I	1	3,49	3,35	3,13	3,24	3-5 (Voigt, 1995)
	II	2	3,56	3,23	3,36	3,26	
	III	3	3,21	3,42	3,47	3,75	
	$\overline{x}$		3,42	3,33	3,32	3,41	
	SD		0,185	0,096	0,173	0,289	
Waktu alir (detik)	I	1	10,43	10,32	10,24	10,21	Tidak lebih dari 10 detik (Banker & Anderson, 1986)
		2	10,58	10,24	10,12	10,54	
		3	10,38	10,41	10,36	10,44	
	II	1	10,11	10,22	10,33	10,33	
		2	10,09	10,13	10,28	10,28	
		3	10,24	10,4	10,24	10,35	
	III	1	10,33	10,27	10,24	10,47	
		2	10,31	10,39	10,49	10,48	
		3	10,26	10,46	10,39	10,37	
	$\overline{x}$		10,30	10,32	10,30	10,39	
	SD		0,1532	0,1083	0,1074	0,1057	
Sudut diam (derajat)	I	1	30,25	32,59	33,72	33,57	25-40 (Banker & Anderson, 1986)
		2	31,95	33,32	32,74	34,91	
		3	31,45	33,43	33,71	35,23	
	II	1	32,07	32,63	35,56	33,51	
		2	31,3	34,43	34,41	32,51	
		3	30,31	33,51	31,26	32,99	
	III	1	32,1	32,6	34,79	32,49	
		2	30,16	33,52	34,65	33,75	
		3	30,11	34,3	33,75	32,89	
	$\overline{x}$		31,08	33,37	33,84	33,54	
	SD		0,8683	0,6879	1,2623	0,9789	

Indeks kompresibilitas (persen)	I	1	13,00	13,50	12,50	12,50	5-15 = baik (Siregar, 1992)
		2	12,50	13,00	13,00	13,00	
		3	13,00	12,50	13,00	13,00	
	II	1	13,50	12,50	12,50	13,00	
		2	13,00	12,50	12,50	12,50	
		3	12,50	13,50	13,00	12,50	
	III	1	12,50	13,00	13,00	13,00	
		2	13,00	13,00	13,00	13,00	
		3	13,50	13,50	12,50	13,00	
	$\overline{X}$		12,94	13,00	12,78	12,83	
	SD		0,3909	0,4330	0,2635	0,2500	

LAMPIRAN B

HASIL UJI KEKERASAN TABLET PARASETAMOL

Batch I

No	Kekerasan Tablet Parasetamol (kp)			
	Formula A	**Formula B**	**Formula C**	**Formula D**
1	6,72	4,49	21,88	10,56
2	6,75	4,52	21,33	10,55
3	6,73	4,55	21,56	10,54
4	6,65	4,61	21,69	10,87
5	6,89	4,67	21,22	10,48
6	6,54	4,87	21,18	10,35
7	6,68	4,56	21,25	10,56
8	6,53	4,64	21,55	10,78
9	6,63	4,69	21,68	10,47
10	6,78	4,68	21,36	10,23
$\overline{X}$ ±SD	6,69 ± 0,1093	4,628 ± 0,1099	21,47 ± 0,2361	10,54 ± 0,1850
SD rel (%)	1,6338	2,3747	1,0998	1,7556

Batch II

No	Kekerasan Tablet Parasetamol (kp)			
	Formula A	**Formula B**	**Formula C**	**Formula D**
1	6,49	4,59	21,56	10,56
2	6,89	4,64	21,59	10,36
3	6,86	4,64	21,84	10,55
4	6,52	4,58	21,56	10,96
5	6,65	4,59	21,48	10,87
6	6,63	4,57	21,59	10,88
7	6,51	4,58	21,56	10,54
8	6,56	4,59	21,35	10,53
9	6,57	4,54	21,87	10,52
10	6,52	4,56	21,64	10,59
$\overline{X}$ ± SD	6,62 ± 0,1439	4,588 ± 0,0316	21,604 ± 0,1541	10,636 ± 0,1957
SD rel (%)	2,1751	0,6888	0,7133	1,8399

Batch III

No	Kekerasan Tablet Parasetamol (kp)			
	Formula A	**Formula B**	**Formula C**	**Formula D**
1	6,54	4,58	21,54	10,65
2	6,74	4,56	21,78	10,84
3	6,55	4,67	21,75	10,98
4	6,49	4,49	21,61	10,56
5	6,58	4,68	21,56	10,58
6	6,56	4,55	21,58	10,57
7	6,54	4,59	21,62	10,56
8	6,53	4,48	21,48	10,87
9	6,55	4,68	21,56	10,99
10	6,38	4,67	21,55	10,33
$\overline{X}$ ± SD	6,546 ± 0,0882	4,595 ± 0,0771	21,603 ± 0,0939	10,693 ± 0,2161
SD rel (%)	1,3474	1,6779	0,4347	2,0209

LAMPIRAN C

HASIL UJI KERAPUHAN TABLET PARASETAMOL

Batch I

Formula	Replikasi	Berat awal (gram)	Berat akhir (gram)	Kerapuhan (%)	$\overline{X}$ ±SD
A	1	13,98	13,91	0,49	0,453 ± 0,0404
	2	14,11	14,05	0,41	
	3	14,05	13,99	0,46	
B	1	13,99	13,79	1,45	1,51 ± 0,0557
	2	14,02	13,8	1,56	
	3	14,07	13,86	1,52	
C	1	13,97	13,92	0,35	0,337 ± 0,0153
	2	14,02	13,98	0,32	
	3	14,05	14,00	0,34	
D	1	14,08	13,98	0,72	0,663 ± 0,0665
	2	14,06	13,96	0,68	
	3	13,96	13,88	0,59	

Batch II

Formula	Replikasi	Berat awal (gram)	Berat akhir (gram)	Kerapuhan (%)	$\overline{X}$ ± SD
A	1	14,03	13,97	0,42	0,447 ± 0,0252
	2	13,95	13,88	0,47	
	3	14,12	14,06	0,45	
B	1	14,01	13,78	1,66	1,653 ± 0,0404
	2	14,06	13,83	1,61	
	3	13,91	13,82	1,69	
C	1	14,07	14,02	0,37	0,323 ± 0,0416
	2	14,02	13,98	0,31	
	3	14,00	13,96	0,29	
D	1	14,06	13,98	0,57	0,663 ± 0,0833
	2	14,09	13,99	0,69	
	3	13,99	13,89	0,73	

Batch III

Formula	Replikasi	Berat awal (gram)	Berat akhir (gram)	Kerapuhan (%)	$\overline{X}$ ± SD
A	1	14,03	13,96	0,49	0,453 ± 0,0351
	2	14,05	13,99	0,45	
	3	14,06	14,00	0,42	
B	1	13,99	13,77	1,58	1,643 ± 0,0651
	2	13,91	13,67	1,71	
	3	14,02	13,79	1,64	
C	1	14,11	14,06	0,36	0,347 ± 0,0153
	2	14,06	14,01	0,33	
	3	14,03	13,98	0,35	
D	1	14,02	13,93	0,65	0,737 ± 0,0808
	2	14,05	13,94	0,75	
	3	13,98	13,87	0,81	

LAMPIRAN D

HASIL UJI WAKTU HANCUR TABLET PARASETAMOL

Batch I

Replikasi	Waktu Hancur (menit)			
	Formula I	Formula II	Formula III	Formula IV
1	3,75	1,67	15,67	7,88
2	3,87	1,69	16,28	7,86
3	3,76	1,61	15,59	7,89
$\overline{X}$ ±SD	3,79 ± 0,0666	1,66 ± 0,0416	15,85 ± 0,3774	7,88 ± 0,0153

Batch II

Replikasi	Waktu Hancur (menit)			
	Formula I	Formula II	Formula III	Formula IV
1	3,98	1,64	15,78	7,78
2	3,77	1,68	15,67	7,98
3	3,88	1,67	15,65	7,81
$\overline{X}$ ±SD	3,88 ± 0,105	1,66 ± 0,0208	15,7 ± 0,07	7,86 ± 0,1079

Batch III

Replikasi	Waktu Hancur (menit)			
	Formula I	Formula II	Formula III	Formula IV
1	3,85	1,69	15,67	7,84
2	3,87	1,65	15,89	7,56
3	3,91	1,68	15,78	7,86
$\overline{X}$ ±SD	3,88 ± 0,0306	1,67 ± 0,0208	15,78 ± 0,11	7,75 ± 0,1677

LAMPIRAN E

HASIL PENETAPAN KADAR TABLET PARASETAMOL

Batch I

Formula	Replikasi	Absorbansi	Csampel (µg/ml)	Cteoritis (µg/ml)	Kadar (%)	$\overline{X}$ ±SD	SD rel (%)
A	1	0,471	499,857	500,357	99,9	100,23 ± 0,3512	0,3504
	2	0,472	501,429	500,429	100,2		
	3	0,474	503,575	500,571	100,6		
B	1	0,472	500,643	500,143	100,1	100,07 ± 0,2517	0,2515
	2	0,471	499,214	500,214	99,8		
	3	0,473	501,929	500,429	100,3		
C	1	0,473	502,359	500,357	100,4	99,93 ± 0,4163	0,4166
	2	0,469	498,285	500,286	99,6		
	3	0,470	499,071	500,071	99,8		
D	1	0,472	500,785	499,786	100,2	100,2 ± 0,4	0,3992
	2	0,474	503,647	500,643	100,6		
	3	0,470	499,143	500,143	99,8		

Batch II

Formula	Replikasi	Absorbansi	Csampel (µg/ml)	Cteoritis (µg/ml)	Kadar (%)	$\overline{X}$ ± SD	SD rel (%)
A	1	0,470	499,143	500,143	99,8	100 ± 0,4359	0,4359
	2	0,474	503,074	500,571	100,5		
	3	0,469	498,144	499,643	99,7		
B	1	0,467	495,429	499,929	99,1	99,73 ± 0,5686	0,5658
	2	0,472	501,358	500,357	100,2		
	3	0,471	499,928	500,429	99,9		
C	1	0,473	501,715	500,214	100,3	100,5 ± 0,2	0,199
	2	0,473	502,572	500,071	100,5		
	3	0,474	503,284	499,786	100,7		
D	1	0,469	498,427	500,429	99,6	99,93 ± 0,3512	0,3514
	2	0,471	499,714	500,214	99,9		
	3	0,472	501,357	499,857	100,3		

Batch III

Formula	Replikasi	Absorbansi	Csampel (µg/ml)	Cteoritis (µg/ml)	Kadar (%)	$\overline{X}$ ± SD	SD rel (%)
A	1	0,469	498,427	500,429	99,6	99,77 ± 0,1528	0,1532
	2	0,470	499,143	500,143	99,8		
	3	0,471	499,571	500,071	99,9		
B	1	0,471	500,286	499,786	100,1	100,4 ± 0,3606	0,3592
	2	0,473	501,715	500,214	100,3		
	3	0,475	504,432	500,429	100,8		
C	1	0,469	497,355	500,357	99,4	99,83 ± 0,5859	0,5869
	2	0,474	503,289	500,786	100,5		
	3	0,469	498,427	500,429	99,6		
D	1	0,476	504,932	500,429	100,9	100,37 ± 0,5508	0,5488
	2	0,470	499,071	500,071	99,8		
	3	0,473	502,215	500,214	100,4		

LAMPIRAN F

HASIL UJI DISOLUSI TABLET PARASETAMOL PADA T = 30 MENIT

Batch I

Formula	Replikasi	Absorbansi	Csampel (µg/ml)	Wt (mg)	% obat terlarut	X±SD	SD rel (%)
(-1)	1	0,386	5,211	469,00	93,8	94,7 ± 1,082	1,143
	2	0,394	5,328	479,50	95,9		
	3	0,389	5,244	472,00	94,4		
(a)	1	0,389	5,265	473,83	94,7	94,6 ± 0,954	1,008
	2	0,384	5,170	465,33	93,6		
	3	0,393	5,309	477,83	95,5		
(b)	1	0,379	5,102	459,18	91,9	90,6 ± 1,528	1,687
	2	0,375	5,046	454,18	90,9		
	3	0,368	4,935	444,19	88,9		
(ab)	1	0,394	5,327	479,46	95,7	95,03 ±1,514	1,593
	2	0,396	5,349	481,46	96,1		
	3	0,385	5,194	467,43	93,3		

Batch II

Formula	Replikasi	Absorbansi	Csampel (µg/ml)	Wt (mg)	% obat terlarut	X±SD	SD rel (%)
(-1)	1	0,385	5,194	467,50	93,5	94,63 ± 1,150	1,215
	2	0,389	5,255	473,00	94,6		
	3	0,394	5,322	479,00	95,8		
(a)	1	0,390	5,270	474,33	94,8	96,27 ± 1,365	1,418
	2	0,397	5,365	482,84	96,5		
	3	0,400	5,420	487,84	97,5		
(b)	1	0,382	5,149	463,42	92,6	91,57 ± 1,050	1,147
	2	0,379	5,093	458,41	91,6		
	3	0,375	5,032	452,91	90,5		
(ab)	1	0,394	5,320	478,81	95,6	95,97 ± 1,387	1,445
	2	0,391	5,276	474,81	94,8		
	3	0,401	5,426	488,33	97,5		

Batch III

Formula	Replikasi	Absorbansi	Csampel (µg/ml)	Wt (mg)	% obat terlarut	X±SD	SD rel (%)
(-1)	1	0,390	5,267	474,00	94,8	96,07 ± 1,553	1,617
	2	0,393	5,311	478,00	95,6		
	3	0,401	5,433	489,00	97,8		
(a)	1	0,404	5,476	492,84	98,5	96,5 ± 1,952	2,022
	2	0,396	5,359	482,34	96,4		
	3	0,390	5,259	473,33	94,6		
(b)	1	0,375	5,032	452,91	90,5	91,53 ± 1,002	1,095
	2	0,379	5,093	458,41	91,6		
	3	0,382	5,144	462,92	92,5		
(ab)	1	0,393	5,309	477,81	95,4	94,17 ± 1,498	1,591
	2	0,389	5,264	473,80	94,6		
	3	0,382	5,148	463,29	92,5		

LAMPIRAN G

CONTOH PERHITUNGAN SUDUT DIAM

Formula (-1):

W persegi panjang = 4,95 gram

W lingkaran = 1,49 gram

Luas persegi panjang = 21,5 x 27,9

= 599,85 cm^2

Luas lingkaran = $\frac{1,49 \times 599,85}{4,95} = 180,56$

A = $л.r^2$

$r^2 = \frac{A}{л}$

$= \frac{180,56}{3,14} = 57,5$

r = 7,58 cm

$tg\ \alpha = \frac{t}{r} = \frac{4,65}{7,58} = 0,6128$

$\alpha = 31,50^o$

CONTOH PERHITUNGAN INDEKS KOMPRESIBILITAS:

Formula (-1) :

Berat gelas = 134,93 g (W_1)

Berat gelas + granul = 200,24 g (W_2)

V_1 = 100 ml

V_2 = 87 ml

Bj nyata = $\frac{(W_2 - W_1)}{V_1} = \frac{(200,24 - 134,93)}{100} = 0,6531$

Bj mampat $= \frac{(W_2 - W_1)}{V_2} = \frac{(200{,}24 - 134{,}93)}{87} = 0{,}7508$

% kompresibilitas $= \left(1 - \frac{Bj.nyata}{Bj.mampat}\right) x 100\% = 13{,}00\%$

CONTOH PERHITUNGAN AKURASI DAN PRESISI:

Replikasi	Konsentrasi	Absorbansi	Konsentrasi (µg/ml)	Teoritis (µg/ml)	Perolehan Kembali (%)	KV (%)
I	80%	0,3814	3,982	4,002	99,5	0,2090
	100%	0,4693	4,979	5,010	99,4	
	120%	0,5645	6,058	6,070	99,8	
II	80%	0,3851	4,024	4,020	100,1	0,2084
	100%	0,4709	4,997	5,007	99,8	
	120%	0,5605	6,012	6,030	99,7	
III	80%	0,3823	3,992	4,008	99,6	0,3790
	100%	0,4716	5,005	5,020	99,7	
	120%	0,5614	6,023	6,005	100,3	
				$\overline{X}$	99,77	0,2655

Absorbansi = 0,3814 → y = 0,0882x + 0,0302

Konsentrasi sebenarnya = 3,982 ppm

Konsentrasi teoritis = 4,002 ppm

% perolehan kembali = (konsentrasi sebenarnya / konsentrasi teoritis) x 100%

= (3,982 / 4,002) x 100%

= 99,5 %

Untuk menghitung % KV $= \frac{SD}{\overline{X}} x100\%$

$= \frac{0,2802}{99,57} x100\%$

$= 0,2090\ \%$

CONTOH PERHITUNGAN PERSEN OBAT TERLEPAS:

$$\% \text{ obat terlepas} = \frac{Wt}{\frac{PK}{100} \times dosis} \times 100\%$$

Formula A replikasi 1 pada t = 30 menit

$$\% \text{ obat terlepas} = \frac{469}{\frac{100}{100} \times 500} \times 100\% = 93,8\%$$

LAMPIRAN H

SERTIFIKAT ANALISIS BAHAN PARASETAMOL

HEBEI JIHENG （GROUP） PHARMACY CO.，LTD

CERTIFICATE OF ANALYSIS DATE: APR.14, 2009

Name of Product	PARACETAMOL		
Lot No.	0904049	No.	04049
Quantity	6000kg	Test. Date	APR.09,2009
Mfg. Date	APR.08,2009	Exp. Date	APR.07,2013
Quality Standard	BP2007		

Tests	Standards	Results
Description	white, fine powder, odorless	white, fine powder, odorless
Solubility	Free soluble in alcohol, sparingly soluble in water, very slightly soluble in ethylene chloride	*Conforms Positive*
Identification	A) Melting point 168~172℃ B) specific Absorbance at 249nm-890nm (860.0-980.0) C) IR-Complies BP 2007 D)Complies BP 2007 E) Complies BP 2007	*169.3 ℃—170.3 ℃* *925* *Complies* *Complies*
Related substance (BY HPLC)	Impurity J(chloroacetanilide) not more than 10 ppm	*Not Detected*
	Impurity K(4-aminophenol) not more than 50 ppm	*6.81ppm*
	Impurity F(4-nitrophenol)not more than 0.05%	*0.0009%*
	any other impurity not more than 0.05%	*0.027%*
	Total of other impurity not more than 0.1%	*0.054%*
Heavy metals	Not more than20ppm	*Less than 20 ppm*
Loss on drying(At 105 ℃)	Not more than0.5%	*0.2%*
Sulphated ash	Not more than0.1%	*0.04%*
Assay	99.0~101.0%(on dried basis)	*99.6%*
Bulk Density	As per IH specs : NLT 0.63g/ml	*0.64g/ml*
Foreign matter	Not more than 10 per/5g	5 per/5g
Absorbance at 420nm	Not more than 0.03	*0.02*
Particle Size	As per IH specs : NLT 80 % Passing through 60 mesh	*Complies*
Storage	Store in a air tight container. protect from light	
Conclusion:	Complies with BP2007	
Inspector	刘立双	Checker
Director of Q C. Department:	冯向前	

IMPORT APPLICATION NO.:031/030/6292/09

PT. BRATACO

AC-DI-SOL

JRS PHARMA JRS LEADING THE WORLD IN EXCIPIENTS
A Member of the JRS Group

VIVASOL®

Croscarmellose Sodium Ph. Eur., NF, JPE

CERTIFICATE OF ANALYSIS

Batch-no.: 3201074249
Re-evaluation date: November 2011
Manufacturing date: November 2007

Manufacturing site: Pirna, Germany

Description	Almost white, very hygroscopic powder; practically insoluble in acetone, ethanol, ether and toluene.

Standards	Specification	Batch Result	Reference
Particle size (retained on air jet sieve)			T226F (MCW)
> 75 µm	max. 2 %	< 2 % *	
> 45 µm	max. 10 %	< 10 % *	

Pharmacopoeial test items	Specification	Batch Result	Reference
Identification (A, B, C), (1, 2, 3)	passes	passes *	Ph. Eur., NF, JPE
Degree of Substitution	0.60 – 0.85	0.77 *	Ph. Eur., NF, JPE
Loss on drying	max. 10.0 %	5.6 %	Ph. Eur., NF, JPE
pH	5.0 - 7.0	6.3	Ph. Eur., USP
Content of water-soluble material	1.0 -10.0 %	4.5 %	Ph. Eur., NF, JPE
Sulphated ash	14.0 – 28.0 %	passes *	Ph. Eur.
Settling volume	10.0 – 30.0 ml	17.0 ml	Ph. Eur., NF, JPE
Sodium chloride and Sodium glycolate	max. 0.5 %	< 0.5 % *	T CC 013 (CHP)
Heavy metals	max. 10 ppm	< 10 ppm *	T CC 043 (CHP)
Arsenic	max. 2 ppm	< 2 ppm *	T CC 043 (CHP)
Residue of Methanol	max. 1.0 %	< 1.0 % *	T CC 019 (CHP)
Total aerobic microbial count	< 100 CFU / g	< 100 CFU / g *	Ph. Eur., USP
Fungi / molds and yeasts	< 20 CFU / g	< 20 CFU / g *	Ph. Eur., USP
E. coli, Pseudomonas aeruginosa	absent in 10 g	absent *	Ph. Eur., USP
Staph. aureus, Salmonella spec.	absent in 10 g	absent *	Ph. Eur., USP

* Results reported are expected results based on periodic testing.

The batch described by this certificate meets the requirements of Ph. Eur., NF and JPE monographs for "Croscarmellose Sodium" current edition, it complies with E 468 monograph and all current EU Food regulations. It is released on the basis of the results ascertained.

The raw materials, manufacturing process, and product do not contain any of the solvents listed in Organic Volatile Impurities (USP<467>) and Residual Solvents (Ph. Eur.<5.4>) except for Methanol limited to max. 1.0%.

Storage recommendation: Protect from excessive heat and moisture.
Keep containers closed.

January 29, 2008
AB: 21120818
VSOL P07

Nadja Schönlebe
QUALITY CONTROL
CHP Carbohydrate Pirna

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PVP K-30

杭州南杭化工有限公司
NANHANG INDUSTRIAL CO.,LTD
地址:中国杭州市西湖区周浦乡姚家坞

CERTIFICATE OF ANALYSIS

Product	PVP K-30 USP/BP		
Batch No.	20051213	Quantity	2025KGS
Manufacture Date	DEC.,2005	Expiry Date	DEC.,2008

ITEMS	SPECIFICATIONS	TEST RESULTS
Characteristics	A white, fine powder	Complies
Identification	Positive	Positive
Water	5% max	2.8%
Residue on ignition	0.1% max	0.02%
K-Value	27-32	30.7
Heavy metals(Lead)	10ppm max	Complies
Nitrogen	11.5%-12.8%	12.2%
Vinylpyrrolidone	0.2% max	0.032%
Aldehydes	0.05% max	Complies
Ph Value	3.0-7.0	3.62
Hydrazine	1ppm max	Complies
Peroxides	400ppm max	Complies
Microbial Limits(By annual verification test)	Salmonalla	Negative
	Coli	Negative
	Coliforms <1CFU/gm	Conform
	Standard Plate Count<10,000CFU/gm	Conform
	Mold & Yeast <1,000 CFU/gm	Conform

Conclusion: IT CONFORMS USP/BP

Analyst: Wang liu ling Checker: li ling Head of Q.C.Dept: Wang xiao fang

TALKUM

SUN PLAN DEVELOPMENT LTD.

CERTIFICATE OF ANALYSIS

INVOICE NO. 1514

TO: PT BRATACO JL. KELENTENG NO. 8
BANDUNG QQ PT BRATACO JL. MANGGA
BESAR V/8 JAKARTA, INDONESIA
NPWP.01.130.689.1-032.001

RE: 48 MT TALC POWDER HAICHEN SHIPPED PER V SL "HUANDAO " V.3192 FROM BAYUQUAN, CHINA SEAPORT TO TG.PRIOK PORT, JAKARTA, INDONESIA ON ABOUT 18 OCT 2003
DRAWN UNDER IRREVOCABLE DC NO.02/03U/0645 DD 19SEPT03 OF BANK NISP PT (SWIFT ADDRESS : NISPIDJA)

COMMODITY : TALC POWDER HAICHEN
QUANTITY : 48 MT

SiO2 :	60.1%
MgO :	30.8%
WHITENESS :	92.8%
CaO :	0.4%
:O3 :	0.26%
Al2O3 :	0.3%
LOI :	6.0%
FINENESS :	98.5% PASSING THROUGH 325 MESH
PH :	7-9
MOISTURE :	0.38%
ASBESTOS :	FREE

BRATACO
IMPORTER
MANUFACTURER
DISTRIBUTOR

For and on behalf of
SUN PLAN DEVELOPMENT LIMITED
IMPORTER
MANUFACTURER
DISTRIBUTOR

MAGNESIUM STEARAT

PETER GREVEN
Partner der Industrie

QUALITÄTSMANAGEMENT

CERTIFICATE OF ANALYSIS

customer: PT BRATACO
contact person:
FAX:
your order-number: PTB0735/V1104 **our order-number:** 4011746
delivered on: 04.08.2004 **quantity:** 9000
brand: LIGA MAGNESIUM STEARATE MF-2-V VEGETABLE **charge-no.** C447176
manufacturing date: 2004-07-19 **expiry date:** 2006-07-19

product is in accordance with the USP27/NF22/BP2003/Ph.Eur 4rd ed./DAB10/JP 14th. ed./FCC 5th. ed.

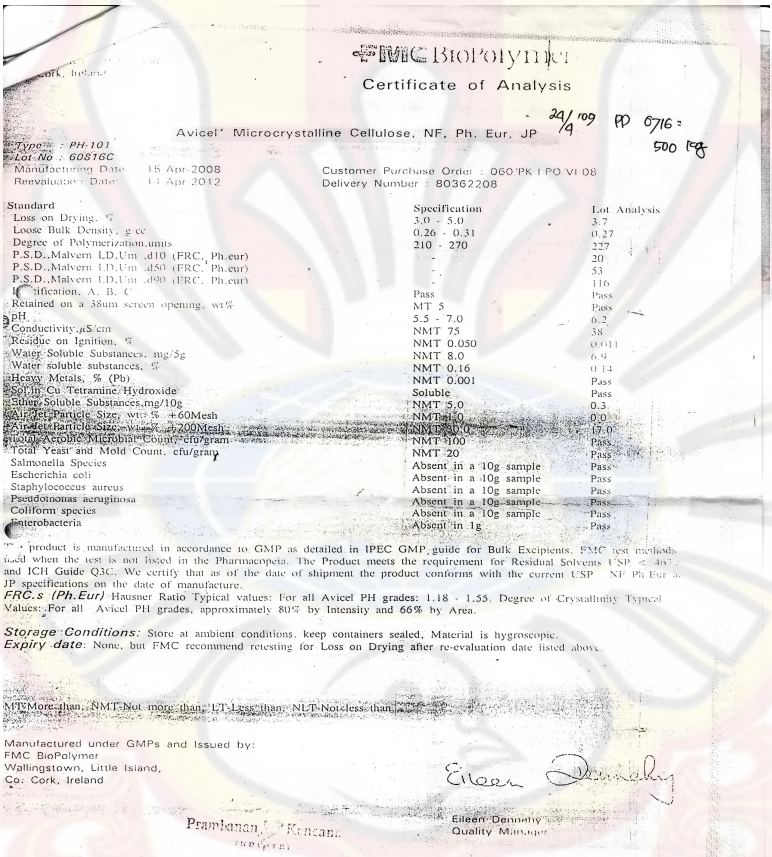
parameter	unit	method	result
ntification A	eC	Ph.Eur	59
f(stion A	metal reaction	USP/NF	passes test
ification B	retention time GC	USP/NF	retentions match
idity or	ml 0,01N HCl	Ph.Eur	<0,5
alinity	ml 0.01 N NaOH	Ph.Eur	<0,5
avy metals as Pb	ppm	JP	<20
ad	ppm	BAE 300-B	<1
dmium	ppm	BAE 300-B	<1
ckel	ppm	BAE 300-B	<1
hloride	%	Ph.Eur	<0,1
ulphate	%	Ph.Eur	<0,5
cid value of the fatty acid	mg KOH/g	Ph.Eur	204,8
elative content of stearic acid	%	USP/NF	65,1
el. cont. of stearic and palmetic acid	%	USP/NF	98,9
erobic microbial count	cfu/g	USP/NF	<10
olds & Yeasts	cfu/g	USP/NF	105
scherichia coli	cfu/g	USP/NF	absent
lmonella Species	cfu/g	USP/NF	absent
rganic volatile impurties		USP/NF	meets USP/NF
es on drying	%	BAE 600	3,9
agnesium content	%	BAE 200 o	4,7
ee fatty acid	%	BAE 400	0,6
ave residue at 200 mesh	%	BAE 605	0,2
ulk density tapped	g/ml	BAE 611a	0,32
ecific surface area BET	qm/g	USP/NF	10,0
ntamination		BAE 601	in accordance

Venlo, 27.08.04

datas of the obove mentioned delivery are based upon careful test according to the guidlines of our
ity assurance system. They do not release the customer from entry control. Besides we do not garantee
ical properties for concrete applications.
certificate was issued by EDV and does not bear a signature.

BRATACO
EXPORTER
MANUFACTURER
DISTRIBUTOR

AVICEL



FMC BioPolymer

Certificate of Analysis

24/9/09 PD 0716 = 500 kg

Avicel® Microcrystalline Cellulose, NF, Ph. Eur, JP

Type : PH-101
Lot-No : 60816C
Manufacturing Date : 15 Apr 2008
Reevaluation Date : 14 Apr 2012
Customer Purchase Order : 060'PK I PO VI 08
Delivery Number : 80362208

Standard	Specification	Lot Analysis
Loss on Drying, %	3.0 - 5.0	3.7
Loose Bulk Density, g/cc	0.26 - 0.31	0.27
Degree of Polymerization,units	210 - 270	227
P.S.D.,Malvern LD,Um ,d10 (FRC, Ph.eur)	-	20
P.S.D.,Malvern LD,Um ,d50 (FRC, Ph.eur)	-	53
P.S.D.,Malvern LD,Um ,d90 (FRC, Ph.eur)	-	116
Identification, A, B, C	Pass	Pass
Retained on a 38um screen opening, wt%	MT 5	Pass
pH	5.5 - 7.0	6.2
Conductivity,µS/cm	NMT 75	38
Residue on Ignition, %	NMT 0.050	0.011
Water Soluble Substances, mg/5g	NMT 8.0	6.9
Water soluble substances, %	NMT 0.16	0.14
Heavy Metals, % (Pb)	NMT 0.001	Pass
Sol.in Cu Tetramine Hydroxide	Soluble	Pass
Ether Soluble Substances,mg/10g	NMT 5.0	0.3
Air-Jet Particle Size, wt% +60Mesh	NMT 10	0.0
Air-Jet Particle Size, wt% +200Mesh	NMT 30.0	17.0
Total Aerobic Microbial Count, cfu/gram	NMT 100	Pass
Total Yeast and Mold Count, cfu/gram	NMT 20	Pass
Salmonella Species	Absent in a 10g sample	Pass
Escherichia coli	Absent in a 10g sample	Pass
Staphylococcus aureus	Absent in a 10g sample	Pass
Pseudomonas aeruginosa	Absent in a 10g sample	Pass
Coliform species	Absent in a 10g sample	Pass
Enterobacteria	Absent in 1g	Pass

This product is manufactured in accordance to GMP as detailed in IPEC GMP guide for Bulk Excipients. FMC test methods used when the test is not listed in the Pharmacopeia. The Product meets the requirement for Residual Solvents USP <467> and ICH Guide Q3C. We certify that as of the date of shipment the product conforms with the current USP NF Ph.Eur and JP specifications on the date of manufacture.

FRC.s (Ph.Eur) Hausner Ratio Typical values: For all Avicel PH grades: 1.18 - 1.55. Degree of Crystallinity Typical Values: For all Avicel PH grades, approximately 80% by Intensity and 66% by Area.

Storage Conditions: Store at ambient conditions, keep containers sealed. Material is hygroscopic.
Expiry date: None, but FMC recommend retesting for Loss on Drying after re-evaluation date listed above.

NT=More than, NMT=Not more than, LT=Less than, NLT=Not less than

Manufactured under GMPs and Issued by:
FMC BioPolymer
Wallingstown, Little Island,
Co. Cork, Ireland

Eileen Dennehy
Quality Manager

Pramkanan ? Kanan.

LAMPIRAN I

TABEL Z

z	0	1	2	3	4	5	6	7	8	9
.0	.5000	.5040	.5080	.5120	.5160	.5199	.5239	.5279	.5319	.5359
.1	.5398	.5438	.5478	.5517	.5557	.5596	.5636	.5675	.5714	.5753
.2	.5793	.5832	.5871	.5920	.5948	.5987	.6026	.6064	.6103	.6141
.3	.6179	.6217	.6255	.6293	.6221	.6368	.6406	.6443	.6480	.6517
.4	.6554	.6591	.6628	.6664	.6700	.6736	.6772	.6808	.6844	.6879
.5	.6915	.6950	.6985	.7019	.7054	.7088	.7123	.7157	.7190	.7224
.6	.7257	.7291	.7324	.7357	.7389	.7422	.7454	.7486	.7517	.7549
.7	.7580	.7611	.7642	.7673	.7703	.7734	.7764	.7794	.7823	.7852
.8	.7881	.7910	.7939	.7967	.7995	.8023	.8051	.8078	.8106	.8133
.9	.8159	.8186	.8212	.8238	.8264	.8289	.8215	.8340	.8365	.8389
1.0	.8413	.8438	.8461	.8485	.8508	.8531	.8554	.8577	.8599	.8621
1.1	.8643	.8665	.8686	.8708	.8729	.8749	.8770	.8790	.8810	.8830
1.2	.8849	.8869	.8888	.8907	.8925	.8944	.8962	.8980	.8997	.9015
1.3	.9032	.9049	.9066	.9082	.9099	.9115	.9131	.9147	.9162	.9177
1.4	.9192	.9207	.9222	.9236	.9251	.9265	.9278	.9292	.9306	.9319
1.5	.9332	.9345	.9357	.9370	.9382	.9394	.9406	.9418	.9430	.9441
1.6	.9452	.9463	.9474	.9484	.9495	.9505	.9615	.9525	.9535	.9545
1.7	.9554	.9564	.9573	.9582	.9591	.9599	.9608	.9616	.9625	.9633
1.8	.9641	.9648	.9656	.9664	.9671	.9678	.9686	.9693	.9700	.9706
1.9	.9713	.9719	.9726	.9732	.9738	.9744	.9750	.9756	.9762	.9767
2.0	.9772	.9778	.9783	.9788	.9793	.9798	.9803	.9808	.9812	.9817
2.1	.9821	.9826	.9830	.9834	.9838	.9842	.9846	.9850	.9854	.9857
2.2	.9861	.9864	.9868	.9871	.9874	.9878	.9881	.9884	.9887	.9890
2.3	.9893	.9896	.9898	.9901	.9904	.9906	.9909	.9911	.9913	.9916
2.4	.9918	.9920	.9922	.9925	.9927	.9929	.9931	.9932	.9934	.9936
2.5	.9938	.9940	.9941	.9943	.9945	.9946	.9948	.9949	.9951	.9952
2.6	.9953	.9955	.9956	.9957	.9959	.9960	.9961	.9962	.9963	.9964
2.7	.9965	.9966	.9967	.9968	.9969	.9970	.9971	.9972	.9973	.9974
2.8	.9974	.9975	.9976	.9977	.9977	.9978	.9979	.9979	.9980	.9981
2.9	.9981	.9982	.9982	.9983	.9984	.9984	.9985	.9985	.9986	.9986
3.	.9987	.9990	.9993	.9995	.9997	.9998	.9998	.9999	.9999	1.0000

z	0	1	2	3	4	5	6	7	8	9
−3.	.0013	.0010	.0007	.0005	.0003	.0002	.0002	.0001	.0001	.0000
−2.9	.0019	.0018	.0017	.0017	.0016	.0016	.0015	.0015	.0014	.0014
−2.8	.0026	.0025	.0024	.0023	.0023	.0022	.0021	.0021	.0020	.0019
−2.7	.0035	.0034	.0033	.0032	.0021	.0030	.0029	.0028	.0027	.0026
−2.6	.0047	.0045	.0044	.0043	.0041	.0040	.0039	.0038	.0037	.0036
−2.5	.0062	.0060	.0059	.0057	.0055	.0054	.0052	.0051	.0049	.0048
−2.4	.0082	.0080	.0078	.0075	.0073	.0071	.0069	.0068	.0066	.0064
−2.3	.0107	.0104	.0102	.0099	.0096	.0094	.0091	.0089	.0087	.0084
−2.2	.0139	.0136	.0132	.0129	.0126	.0122	.0119	.0116	.0113	.0110
−2.1	.0179	.0174	.0170	.0166	.0162	.0158	.0154	.0150	.0146	.0143
−2.0	.0228	.0222	.0217	.0212	.0207	.0202	.0197	.0192	.0188	.0183
−1.9	.0287	.0281	.0274	.0268	.0262	.0256	.0250	.0244	.0238	.0233
−1.8	.0359	.0352	.0344	.0336	.0329	.0322	.0314	.0307	.0300	.0294
−1.7	.0446	.0436	.0427	.0418	.0409	.0401	.0392	.0384	.0375	.0367
−1.6	.0548	.0537	.0526	.0516	.0505	.0495	.0485	.0475	.0465	.0455
−1.5	.0668	.0655	.0643	.0630	.0618	.0606	.0594	.0582	.0570	.0559
−1.4	.0800	.0793	.0778	.0764	.0749	.0735	.0722	.0708	.0694	.0681
−1.3	.0968	.0951	.0934	.0918	.0901	.0885	.0869	.0853	.0838	.0823
−1.2	.1151	.1131	.1112	.1093	.1075	.1056	.1038	.1020	.1003	.0985
−1.1	.1357	.1335	.1314	.1292	.1271	.1251	.1230	.1210	.1190	.1170
−1.0	.1587	.1562	.1539	.1515	.1492	.1469	.1446	.1423	.1401	.1379
−.9	.1841	.1814	.1788	.1762	.1736	.1711	.1685	.1660	.1635	.1611
−.8	.2119	.2090	.2061	.2033	.2005	.1977	.1949	.1922	.1894	.1867
−.7	.2420	.2389	.2358	.2327	.2297	.2266	.2236	.2206	.2177	.2148
−.6	.2743	.2709	.2676	.2643	.2611	.2578	.2546	.2514	.2483	.2451
−.5	.3085	.3050	.3015	.2981	.2946	.2912	.2877	.2843	.2810	.2776
−.4	.3446	.3409	.3372	.3336	.3300	.3264	.3228	.3192	.3156	.3121
−.3	.3821	.3783	.3745	.3707	.3669	.3632	.3594	.3557	.3520	.3483
−.2	.4207	.4168	.4129	.4090	.4052	.4013	.3974	.3936	.3897	.3859
−.1	.4602	.4562	.4522	.4483	.4443	.4404	.4364	.4325	.4286	.4247
−.0	.5000	.4960	.4920	.4880	.4840	.4801	.4761	.4721	.4681	.4641

LAMPIRAN J

TABEL Uji R

DEGREES OF FREEDOM (DF)	5 PERCENT	1 PERCENT	DEGREES OF FREEDOM (DF)	5 PERCENT	1 PERCENT
1	.997	1.000	24	.388	.496
2	.950	.990	25	.381	.487
3	.878	.959	26	.374	.478
4	.811	.917	27	.367	.470
5	.754	.874	28	.361	.463
6	.707	.834	29	.355	.456
7	.666	.798	30	.349	.449
8	.632	.765	35	.325	.418
9	.602	.735	40	.304	.393
10	.576	.708	48	.288	.372
11	.553	.684	50	.273	.354
12	.532	.661	60	.250	.325
13	.514	.641	70	.232	.302
14	.497	.623	80	.217	.283
15	.482	.606	90	.205	.267
16	.468	.590	100	.195	.254
17	.456	.575	125	.174	.228
18	.444	.561	150	.159	.208
19	.433	.549	200	.138	.181
20	.423	.537	300	.113	.148
21	.413	.526	400	.098	.128
22	.404	.515	500	.088	.115
23	.396	.505	1000	.062	.081

Dikutip dari: Soedigdo & Soedigdo (1977)

LAMPIRAN K

TABEL UJI HSD (0,05)

d.k. \ k	2	3	4	5	6	7	8	9	10	11
5	3.64	4.60	5.22	5.67	6.03	6.33	6.58	6.80	6.99	7.17
6	3.46	4.34	4.90	5.30	5.63	5.90	6.12	6.32	6.49	6.65
7	3.34	4.16	4.68	5.06	5.36	5.61	5.82	6.00	6.16	6.30
8	3.26	4.04	4.53	4.89	5.17	5.40	5.60	5.77	5.92	6.05
9	3.20	3.95	4.41	4.76	5.02	5.24	5.43	5.59	5.74	5.87
10	3.15	3.88	4.33	4.65	4.91	5.12	5.30	5.46	5.60	5.72
11	3.11	3.82	4.26	4.57	4.82	5.03	5.20	5.35	5.49	5.61
12	3.08	3.77	4.20	4.51	4.75	4.95	5.12	5.27	5.39	5.51
13	3.06	3.73	4.15	4.45	4.69	4.88	5.05	5.19	5.32	5.43
14	3.03	3.70	4.11	4.41	4.64	4.83	4.99	5.13	5.25	5.36
15	3.01	3.67	4.08	4.37	4.59	4.78	4.94	5.08	5.20	5.31
16	3.00	3.65	4.05	4.33	4.56	4.74	4.90	5.03	5.15	5.26
17	2.98	3.63	4.02	4.30	4.52	4.71	4.86	4 99	5.11	5.21
18	2.97	3.61	4.00	4.28	4.49	4.67	4.82	4.96	5.07	5.17
19	2.96	3.59	3.98	4.25	4.47	4.65	4.79	4.92	5.04	5.14
20	2.95	3.58	3.96	4.23	4.45	4.62	4.77	4.90	5.01	5.11
24	2.92	3.53	3.90	4.17	4.37	4.54	4.68	4.81	4.92	5.01
30	2.89	3.49	3.85	4.10	4.30	4.46	4.60	4.72	4.82	4.92
40	2.86	3.44	3.79	4.04	4.23	4.39	4.52	4.63	4.73	4.82
60	2.83	3.40	3.74	3.98	4.16	4.31	4.44	4.55	4.65	4.73
120	2.80	3.36	3.68	3.92	4.10	4.24	4.36	4.47	4.56	4.64
∞	2.77	3.31	3.63	3.86	4.03	4.17	4.29	4.39	4.47	4.55

Catatan kaki: Dari *Annals of mathematical statistics.* Diulang cetak seizin penerbit, The Institute of Mathematical Statistics.

Sumber: Schefler (1987).

LAMPIRAN L

HASIL UJI STATISTIK KEKERASAN TABLET ANTAR FORMULA BATCH 1

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	10	66.9	6.69	0.011956
Column 2	10	46.28	4.628	0.012084
Column 3	10	214.7	21.47	0.055756
Column 4	10	105.39	10.539	0.034232

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1688.987	3	562.9956	19749.42	6.16E-58	2.866266
Within Groups	1.02625	36	0.028507			
Total	1690.013	39				

Hipotesa Pengujian :
Fhitung > Ftabel (0,05) sehingga H ditolak dan ada perbedaan yang bermakna antar formula

HSD = 0.341057

		FA	FB		FC		FD	
	Mean	6.69	4.628		21.47		10.539	
FA	6.69	0	-2.062	*	14.78	*	3.849	*
FB	4.628		0		16.842	*	5.911	*
FC	21.47				0		-10.931	*
FD	10.539						0	

Keterangan
Simbol* : Perbedaannya signifikan, karena selisihnya > HSD(5%)
Tanpa Simbol : Perbedaannya tidak signifikan, karena selisihnya < HSD(5%)

BATCH 2

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	10	66.2	6.62	0.020733
Column 2	10	45.88	4.588	0.000996
Column 3	10	216.04	21.604	0.02376
Column 4	10	106.36	10.636	0.038293

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1727.993	3	575.9976	27499.75	1.6E-60	2.866266
Within Groups	0.75404	36	0.020946			
Total	1728.747	39				

Hipotesa Pengujian :
Fhitung > Ftabel (0,05) sehingga H ditolak dan ada perbedaan yang bermakna antar formula

HSD = 0.292346

	Mean	FA 6.62	FB 4.588	FC 21.604	FD 10.636
FA	6.62	0	-2.032 *	14.984 *	4.016 *
FB	4.588		0	17.016 *	6.048 *
FC	21.604			0	-10.968 *
FD	10.636				0

Keterangan
Simbol* : Perbedaannya signifikan, karena selisihnya > HSD(5%)
Tanpa Simbol : Perbedaannya tidak signifikan, karena selisihnya < HSD(5%)

BATCH 3

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	10	65.46	6.546	0.007782
Column 2	10	45.95	4.595	0.005939
Column 3	10	216.03	21.603	0.008823
Column 4	10	106.93	10.693	0.046712

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1733.008	3	577.6692	33363.96	4.92E-62	2.866266
Within Groups	0.62331	36	0.017314			
Total	1733.631	39				

Hipotesa Pengujian :
Fhitung > Ftabel (0,05) sehingga H ditolak dan ada perbedaan yang bermakna antar formula

HSD = 0.265798

	Mean	FA 6.546	FB 4.595	FC 21.603	FD 10.693
FA	6.546	0	-1.951 *	15.057 *	4.147 *
FB	4.595		0	17.008 *	6.098 *
FC	21.603			0	-10.91 *
FD	10.693				0

terangan
nbol* : Perbedaannya signifikan, karena selisihnya > HSD(5%)
npa Simbol : Perbedaannya tidak signifikan, karena selisihnya < HSD(5%)

LAMPIRAN M

HASIL UJI STATISTIK KERAPUHAN TABLET ANTAR FORMULA BATCH 1

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	1.61	0.536667	0.000133
Column 2	3	4.41	1.47	0.0004
Column 3	3	0.97	0.323333	3.33E-05
Column 4	3	2.2	0.733333	0.000233

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	2.235692	3	0.745231	3726.153	6.44E-13	4.066181
Within Groups	0.0016	8	0.0002			
Total	2.237292	11				

Hipotesa Pengujian :
Fhitung > Ftabel (0,05) sehingga H ditolak dan ada perbedaan yang bermakna antar formula

HSD =	0.028567								
		FA		FB		FC		FD	
	Mean	0.536667		1.47		0.323333		0.733333	
FA	0.536667	0		0.933333	*	-0.21333	*	0.196667	*
FB	1.47			0		-1.14667	*	-0.73667	*
FC	0.323333					0		0.41	*
FD	0.733333							0	

Keterangan
Simbol* : Perbedaannya signifikan, karena selisihnya > HSD(5%)
Tanpa Simbol : Perbedaannya tidak signifikan, karena selisihnya < HSD(5%)

BATCH 2

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	1.58	0.526667	0.000233
Column 2	3	4.56	1.52	0.0001
Column 3	3	1	0.333333	3.33E-05
Column 4	3	2.25	0.75	0.0001

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	2.436492	3	0.812164	6961.405	5.29E-14	4.066181
Within Groups	0.000933	8	0.000117			
Total	2.437425	11				

Hipotesa Pengujian :
Fhitung > Ftabel (0,05) sehingga H ditolak dan ada perbedaan yang bermakna antar formula

HSD = 0.021818

	Mean	FA 0.526667	FB 1.52	FC 0.333333	FD 0.75
FA	0.526667	0	0.993333 *	-0.19333 *	0.223333 *
FB	1.52		0	-1.18667 *	-0.77 *
FC	0.333333			0	0.416667 *
FD	0.75				0

Keterangan
Simbol* : Perbedaannya signifikan, karena selisihnya > HSD(5%)
Tanpa Simbol : Perbedaannya tidak signifikan, karena selisihnya < HSD(5%)

BATCH 3

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	1.6	0.533333	3.33E-05
Column 2	3	4.47	1.49	0.0001
Column 3	3	0.98	0.326667	3.33E-05
Column 4	3	2.19	0.73	0.0001

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	2.317667	3	0.772556	11588.33	6.89E-15	4.066181
Within Groups	0.000533	8	6.67E-05			
Total	2.3182	11				

Hipotesa Pengujian :
Fhitung > Ftabel (0,05) sehingga H ditolak dan ada perbedaan yang bermakna antar formula

HSD = 0.016493

		FA	FB	FC	FD
	Mean	0.533333	1.49	0.326667	0.73
FA	0.533333	0	0.956667 *	-0.20667 *	0.196667 *
FB	1.49		0	-1.16333 *	-0.76 *
FC	0.326667			0	0.403333 *
FD	0.73				0

Keterangan
Simbol* : Perbedaannya signifikan, karena selisihnya > HSD(5%)
Tanpa Simbol : Perbedaannya tidak signifikan, karena selisihnya < HSD(5%)

LAMPIRAN N

HASIL UJI STATISTIK WAKTU HANCUR TABLET ANTAR FORMULA BATCH 1

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	11.38	3.793333	0.004433
Column 2	3	4.97	1.656667	0.001733
Column 3	3	47.54	15.84667	0.142433
Column 4	3	23.63	7.876667	0.000233

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	352.5654	3	117.5218	3158.481	1.25E-12	4.066181
Within Groups	0.297667	8	0.037208			
Total	352.8631	11				

Hipotesa Pengujian :
Fhitung > Ftabel (0,05) sehingga H ditolak dan ada perbedaan yang bermakna antar formula

HSD = 0.389647

		FA		FB		FC		FD	
	Mean	3.793333		1.656667		15.84667		7.876667	
FA	3.793333	0		-2.13667	*	12.05333	*	4.083333	*
FB	1.656667			0		14.19	*	6.22	*
FC	15.84667					0		-7.97	*
FD	7.876667							0	

Keterangan
Simbol* : Perbedaannya signifikan, karena selisihnya > HSD(5%)
Tanpa Simbol : Perbedaannya tidak signifikan, karena selisihnya < HSD(5%)

BATCH 2

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	11.63	3.876667	0.011033
Column 2	3	4.99	1.663333	0.000433
Column 3	3	47.1	15.7	0.0049
Column 4	3	23.57	7.856667	0.011633

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	343.0753	3	114.3584	16336.92	1.75E-15	4.066181
Within Groups	0.056	8	0.007			
Total	343.1313	11				

Hipotesa Pengujian :
Fhitung > Ftabel (0,05) sehingga H ditolak dan ada perbedaan yang bermakna antar formula

HSD =	0.169005								
		FA		FB		FC		FD	
	Mean	3.876667		1.663333		15.7		7.856667	
FA	3.876667	0		-2.21333	*	11.82333	*	3.98	*
FB	1.663333			0		14.03667	*	6.193333	*
FC	15.7					0		-7.84333	*
FD	7.856667							0	

Keterangan
Simbol* : Perbedaannya signifikan, karena selisihnya > HSD(5%)
Tanpa Simbol : Perbedaannya tidak signifikan, karena selisihnya < HSD(5%)

BATCH 3

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	11.63	3.876667	0.000933
Column 2	3	5.02	1.673333	0.000433
Column 3	3	47.34	15.78	0.0121
Column 4	3	23.26	7.753333	0.028133

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	346.4733	3	115.4911	11104.91	8.17E-15	4.066181
Within Groups	0.0832	8	0.0104			
Total	346.5565	11				

Hipotesa Pengujian :
Fhitung > Ftabel (0,05) sehingga H ditolak dan ada perbedaan yang bermakna antar formula

HSD = 0.206

	Mean	FA 3.876667	FB 1.673333	FC 15.78	FD 7.753333
FA	3.876667	0	-2.20333 *	11.90333 *	3.876667 *
FB	1.673333		0	14.10667 *	6.08 *
FC	15.78			0	-8.02667 *
FD	7.753333				0

Keterangan
Simbol* : Perbedaannya signifikan, karena selisihnya > HSD(5%)
Tanpa Simbol : Perbedaannya tidak signifikan, karena selisihnya < HSD(5%)

LAMPIRAN O

HASIL UJI STATISTIK PERSEN DISOLUSI TABLET ANTAR FORMULA BATCH 1

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	284.1	94.7	1.17
Column 2	3	283.8	94.6	0.91
Column 3	3	271.7	90.56667	2.333333
Column 4	3	285.1	95.03333	2.293333

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	40.20917	3	13.40306	7.99387	0.008615	4.066181
Within Groups	13.41333	8	1.676667			
Total	53.6225	11				

Hipotesa Pengujian :
Fhitung > Ftabel (0,05) sehingga H ditolak dan ada perbedaan yang bermakna antar formula

HSD = 2.615621

		FA	FB	FC	FD
	Mean	94.7	94.6	90.56667	95.03333
FA	94.7	0	-0.1	-4.13333 *	0.333333
FB	94.6		0	-4.03333 *	0.433333
FC	90.56667			0	4.466667 *
FD	95.03333				0

Keterangan
Simbol* : Perbedaannya signifikan, karena selisihnya > HSD(5%)
Tanpa Simbol : Perbedaannya tidak signifikan, karena selisihnya < HSD(5%)

BATCH 2

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	283.9	94.63333	1.323333
Column 2	3	288.8	96.26667	1.863333
Column 3	3	274.7	91.56667	1.103333
Column 4	3	287.9	95.96667	1.923333

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	41.5425	3	13.8475	8.9147	0.006246	4.066181
Within Groups	12.42667	8	1.553333			
Total	53.96917	11				

Hipotesa Pengujian :
Fhitung > Ftabel (0,05) sehingga H ditolak dan ada perbedaan yang bermakna antar formula

HSD = 2.517582

		FA	FB	FC		FD	
	Mean	94.63333	96.26667	91.56667		95.96667	
FA	94.63333	0	1.633333	-3.06667	*	1.333333	
FB	96.26667		0	-4.7	*	-0.3	
FC	91.56667			0		4.4	*
FD	95.96667					0	

eterangan
imbol* : Perbedaannya signifikan, karena selisihnya > HSD(5%)
anpa Simbol : Perbedaannya tidak signifikan, karena selisihnya < HSD(5%)

BATCH 3

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	288.2	96.06667	2.413333
Column 2	3	289.5	96.5	3.81
Column 3	3	274.6	91.53333	1.003333
Column 4	3	282.5	94.16667	2.243333

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	46.04667	3	15.34889	6.483163	0.015541	4.066181
Within Groups	18.94	8	2.3675			
Total	64.98667	11				

ipotesa Pengujian :
nitung > Ftabel (0,05) sehingga H ditolak dan ada perbedaan yang bermakna antar formula

SD = 3.10811

		FA	FB	FC		FD
	Mean	96.06667	96.5	91.53333		94.16667
A	96.06667	0	0.433333	-4.53333	*	-1.9
B	96.5		0	-4.96667	*	-2.33333
C	91.53333			0		2.633333
D	94.16667					0

Keterangan
Simbol* : Perbedaannya signifikan, karena selisihnya > HSD(5%)
Tanpa Simbol : Perbedaannya tidak signifikan, karena selisihnya < HSD(5%)

LAMPIRAN P

HASIL ANOVA UJI KEKERASAN PADA PROGRAM DESIGN EXPERT

Response 1 Kekerasan
ANOVA for selected factorial model
Analysis of variance table [Partial sum of squares - Type III]

Source	Sum of Squares	df	Mean Square	F Value	p-value Prob > F	
Model	514.7935	3	171.5978	40614.87	< 0.0001	significant
A-Ac-Di-Sol	125.7769	1	125.7769	29769.67	< 0.0001	
B-PVP K-30	329.3864	1	329.3864	77961.28	< 0.0001	
AB	59.63021	1	59.63021	14113.66	< 0.0001	
Pure Error	0.0338	8	0.004225			
Cor Total	514.8273	11				

The Model F-value of 40614.87 implies the model is significant. There is only a 0.01% chance that a "Model F-Value" this large could occur due to noise.

Values of "Prob > F" less than 0.0500 indicate model terms are significant.
In this case A, B, AB are significant model terms.
Values greater than 0.1000 indicate the model terms are not significant.
If there are many insignificant model terms (not counting those required to support hierarchy),

model reduction may improve your model.

Std. Dev.	0.065	R-Squared	0.999934
Mean	10.85083	Adj R-Squared	0.99991
C.V. %	0.599032	Pred R-Squared	0.999852
PRESS	0.07605	Adeq Precision	451.7544

The "Pred R-Squared" of 0.9999 is in reasonable agreement with the "Adj R-Squared" of 0.9999.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 451.754 indicates an adequate signal. This model can be used to navigate the design space.

Factor	Coefficient Estimate	df	Standard Error	95% CI Low	95% CI High	VIF
Intercept	10.85083	1	0.018764	10.80756	10.8941	
A-Ac-Di-Sol	-3.2375	1	0.018764	-3.28077	-3.19423	1
B-PVP K-30	5.239167	1	0.018764	5.195897	5.282436	1
AB	-2.22917	1	0.018764	-2.27244	-2.1859	1

Final Equation in Terms of Coded Factors:

Kekerasan =
10.85083
-3.2375 * A
5.239167 * B
-2.22917 * A * B

Final Equation in Terms of Actual Factors:

Kekerasan =
-9.08333
1.533333 * Ac-Di-Sol
3.185481 * PVP K-30
-0.3963 * Ac-Di-Sol * PVP K-30

The Diagnostics Case Statistics Report has been moved to the Diagnostics Node.
In the Diagnostics Node, Select Case Statistics from the View Menu.

Proceed to Diagnostic Plots (the next icon in progression). Be sure to look at the:

1) Normal probability plot of the studentized residuals to check for normality of residuals.
2) Studentized residuals versus predicted values to check for constant error.
3) Externally Studentized Residuals to look for outliers, i.e., influential values.
4) Box-Cox plot for power transformations.

If all the model statistics and diagnostic plots are OK, finish up with the Model Graphs icon.

LAMPIRAN Q

HASIL ANOVA UJI KERAPUHAN PADA DESIGN EXPERT

Response 2 Kerapuhan
ANOVA for selected factorial model
Analysis of variance table [Partial sum of squares - Type III]

Source	Sum of Squares	df	Mean Square	F Value	p-value Prob > F	
Model	2.330558	3	0.776853	3728.893	< 0.0001	significant
A-Ac-Di-Sol	1.407675	1	1.407675	6756.84	< 0.0001	
B-PVP K-30	0.696008	1	0.696008	3340.84	< 0.0001	
AB	0.226875	1	0.226875	1089	< 0.0001	
Pure Error	0.001667	8	0.000208			
Cor Total	2.332225	11				

The Model F-value of 3728.89 implies the model is significant. There is only a 0.01% chance that a "Model F-Value" this large could occur due to noise.
Values of "Prob > F" less than 0.0500 indicate model terms are significant.
In this case A, B, AB are significant model terms.
Values greater than 0.1000 indicate the model terms are not significant.
If there are many insignificant model terms (not counting those required to support hierarchy), model reduction may improve your model.

Std. Dev.	0.014434	R-Squared	0.999285
Mean	0.7725	Adj R-Squared	0.999017
C.V. %	1.868447	Pred R-Squared	0.998392
PRESS	0.00375	Adeq Precision	140

The "Pred R-Squared" of 0.9984 is in reasonable agreement with the "Adj R-Squared" of 0.9990.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 140.000 indicates an adequate signal. This model can be used to navigate the design space.

Factor	Coefficient Estimate	df	Standard Error	95% CI Low	95% CI High	VIF
Intercept	0.7725	1	0.004167	0.762892	0.782108	
A-Ac-Di-Sol	0.3425	1	0.004167	0.332892	0.352108	1
B-PVP K-30	-0.24083	1	0.004167	-0.25044	-0.23122	1
AB	-0.1375	1	0.004167	-0.14711	-0.12789	1

Final Equation in Terms of Coded Factors:

Kerapuhan	=	
0.7725		
0.3425	*	A
-0.24083	*	B
-0.1375	*	A * B

Final Equation in Terms of Actual Factors:

Kerapuhan	=	
0.572222		
0.335556	*	Ac-Di-Sol
-0.02911	*	PVP K-30
-0.02444	*	Ac-Di-Sol * PVP K-30

The Diagnostics Case Statistics Report has been moved to the Diagnostics Node.
In the Diagnostics Node, Select Case Statistics from the View Menu.

Proceed to Diagnostic Plots (the next icon in progression). Be sure to look at the:

1) Normal probability plot of the studentized residuals to check for normality of residuals.
2) Studentized residuals versus predicted values to check for constant error.
3) Externally Studentized Residuals to look for outliers, i.e., influential values.
4) Box-Cox plot for power transformations.

If all the model statistics and diagnostic plots are OK, finish up with the Model Graphs icon.

LAMPIRAN R

HASIL ANOVA UJI WAKTU HANCUR DESIGN EXPERT

Response 3 Waktu Hancur
ANOVA for selected factorial model
Analysis of variance table [Partial sum of squares - Type III]

Source	Sum of Squares	df	Mean Square	F Value	p-value Prob > F	
Model	347.42307	3	115.80769	34916.891	< 0.0001	significant
A-Ac-Di-Sol	77.013333	1	77.013333	23220.101	< 0.0001	
B-PVP K-30	245.52653	1	245.52653	74028.101	< 0.0001	
AB	24.8832	1	24.8832	7502.4724	< 0.0001	
Pure Error	0.0265333	8	0.0033167			
Cor Total	347.4496	11				

The Model F-value of 34916.89 implies the model is significant. There is only
a 0.01% chance that a "Model F-Value" this large could occur due to noise.
Values of "Prob > F" less than 0.0500 indicate model terms are significant.
In this case A, B, AB are significant model terms.
Values greater than 0.1000 indicate the model terms are not significant.
If there are many insignificant model terms (not counting those required to support hierarchy),
model reduction may improve your model.

Std. Dev.	0.0575905	R-Squared	0.9999236
Mean	7.28	Adj R-Squared	0.999895
C.V. %	0.7910784	Pred R-Squared	0.9998282
PRESS	0.0597	Adeq Precision	424.46249

The "Pred R-Squared" of 0.9998 is in reasonable agreement with the "Adj R-Squared" of 0.9999.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 424.462 indicates an adequate signal. This model can be used to navigate the design space.

Factor	Coefficient Estimate	df	Standard Error	95% CI Low	95% CI High	VIF
Intercept	7.28	1	0.0166249	7.2416628	7.3183372	
A-Ac-Di-Sol	-2.5333333	1	0.0166249	-2.5716705	-2.4949961	1
B-PVP K-30	4.5233333	1	0.0166249	4.4849961	4.5616705	1
AB	-1.44	1	0.0166249	-1.4783372	-1.4016628	1

Final Equation in Terms of Coded Factors:

Waktu Hancur =

7.28
-2.5333333 * A
4.5233333 * B
-1.44 * A * B

Final Equation in Terms of Actual Factors:

Waktu Hancur =

-8.4737037
0.7940741 * Ac-Di-Sol
2.5133333 * PVP K-30
-0.256 * Ac-Di-Sol * PVP K-30

The Diagnostics Case Statistics Report has been moved to the Diagnostics Node.
In the Diagnostics Node, Select Case Statistics from the View Menu.
Proceed to Diagnostic Plots (the next icon in progression). Be sure to look at the:

1) Normal probability plot of the studentized residuals to check for normality of residuals.
2) Studentized residuals versus predicted values to check for constant error.
3) Externally Studentized Residuals to look for outliers, i.e., influential values.
4) Box-Cox plot for power transformations.

If all the model statistics and diagnostic plots are OK, finish up with the Model Graphs icon.

LAMPIRAN R

HASIL ANOVA UJI PERSEN DISOLUSI PADA PROGRAM DESIGN EXPERT

Response 4 Persen Disolusi
ANOVA for selected factorial model
Analysis of variance table [Partial sum of squares - Type III]

Source	Sum of Squares	df	Mean Square	F Value	p-value Prob > F	
Model	38.858892	3	12.952964	18.080631	0.0006	significant
A-Ac-Di-Sol	15.120075	1	15.120075	21.105632	0.0018	
B-PVP K-30	16.170408	1	16.170408	22.571759	0.0014	
AB	7.5684083	1	7.5684083	10.564501	0.0117	
Pure Error	5.7312	8	0.7164			
Cor Total	44.590092	11				

The Model F-value of 18.08 implies the model is significant. There is only a 0.06% chance that a "Model F-Value" this large could occur due to noise.
Values of "Prob > F" less than 0.0500 indicate model terms are significant.
In this case A, B, AB are significant model terms.
Values greater than 0.1000 indicate the model terms are not significant.
If there are many insignificant model terms (not counting those required to support hierarchy), model reduction may improve your model.

Std. Dev.	0.8464042	R-Squared	0.8714692
Mean	94.300833	Adj R-Squared	0.8232702
C.V. %	0.8975575	Pred R-Squared	0.7108057
PRESS	12.8952	Adeq Precision	9.3450612

The "Pred R-Squared" of 0.7108 is in reasonable agreement with the "Adj R-Squared" of 0.8233.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 9.345 indicates an adequate signal. This model can be used to navigate the design space.

Factor	Coefficient Estimate	df	Standard Error	95% CI Low	95% CI High	VIF
Intercept	94.300833	1	0.2443358	93.737394	94.864273	
A-Ac-Di-Sol	1.1225	1	0.2443358	0.5590606	1.6859394	1
B-PVP K-30	-1.1608333	1	0.2443358	-1.7242728	-0.5973939	1
AB	0.7941667	1	0.2443358	0.2307272	1.3576061	1

Final Equation in Terms of Coded Factors:

Persen Disolusi	=	
94.300833		
1.1225	*	A
-1.1608333	*	B
0.7941667	*	A * B

Final Equation in Terms of Actual Factors:

Persen Disolusi	=	
99.323333		
-0.56	*	Ac-Di-Sol
-0.8525926	*	PVP K-30
0.1411852	*	Ac-Di-Sol * PVP K-30

The Diagnostics Case Statistics Report has been moved to the Diagnostics Node.
In the Diagnostics Node, Select Case Statistics from the View Menu.
Proceed to Diagnostic Plots (the next icon in progression). Be sure to look at the:

1) Normal probability plot of the studentized residuals to check for normality of residuals.
2) Studentized residuals versus predicted values to check for constant error.
3) Externally Studentized Residuals to look for outliers, i.e., influential values.
4) Box-Cox plot for power transformations.

If all the model statistics and diagnostic plots are OK, finish up with the Model Graphs icon.

LAMPIRAN T

HASIL UJI STATISTIK HASIL PERCOBAAN DAN HASIL TEORITIS PADA UJI KEKERASAN

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	4	43.405	10.85125	57.21603
Column 2	4	43.4	10.85	57.23747

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	3.13E-06	1	3.13E-06	5.46E-08	0.999821	5.987378
Within Groups	343.3605	6	57.22675			
Total	343.3605	7				

Hipotesa Pengujian :

Fhitung < Ftabel (0,05) sehingga H diterima dan tidak ada perbedaan bermakna antar formula.

LAMPIRAN U

HASIL UJI STATISTIK HASIL PERCOBAAN DAN HASIL TEORITIS PADA UJI KERAPUHAN

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	4	3.077	0.76925	0.329688
Column 2	4	3.08	0.77	0.257067

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1.12E-06	1	1.12E-06	3.83E-06	0.998501	5.987378
Within Groups	1.760263	6	0.293377			
Total	1.760264	7				

Hipotesa Pengujian :

Fhitung < Ftabel (0,05) sehingga H diterima dan tidak ada perbedaan bermakna antar formula.

LAMPIRAN V

HASIL UJI STATISTIK HASIL PERCOBAAN DAN HASIL TEORITIS PADA UJI WAKTU HANCUR

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	4	29.118	7.2795	38.59821
Column 2	4	29.12	7.28	38.53987

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	5E-07	1	5E-07	1.3E-08	0.999913	5.987378
Within Groups	231.4142	6	38.56904			
Total	231.4142	7				

Hipotesa Pengujian :

Fhitung < Ftabel (0,05) sehingga H diterima dan tidak ada perbedaan bermakna antar formula.

LAMPIRAN W

HASIL UJI STATISTIK HASIL PERCOBAAN DAN HASIL TEORITIS PADA UJI PERSEN DISOLUSI

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	4	377.2	94.3	4.324333
Column 2	4	377.2	94.3	4.2988

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0	1	0	0	1	5.987378
Within Groups	25.8694	6	4.311567			
Total	25.8694	7				

Hipotesa Pengujian :

Fhitung < Ftabel (0,05) sehingga H diterima dan tidak ada perbedaan bermakna antar formula.

LAMPIRAN X

HASIL UJI STATISTIK PENETAPAN KADAR ANTAR FORMULA BATCH 1

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	300.7	100.2333	0.123333
Column 2	3	300.2	100.0667	0.063333
Column 3	3	299.8	99.93333	0.173333
Column 4	3	300.6	100.2	0.16

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.169167	3	0.056389	0.433761	0.734742	4.066181
Within Groups	1.04	8	0.13			
Total	1.209167	11				

Hipotesa Pengujian :

Fhitung < Ftabel (0,05) sehingga H diterima dan tidak ada perbedaan bermakna antar formula.

BATCH 2

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	300	100	0.19
Column 2	3	299.2	99.73333	0.323333
Column 3	3	301.5	100.5	0.04
Column 4	3	299.8	99.93333	0.123333

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.955833	3	0.318611	1.883415	0.210792	4.066181
Within Groups	1.353333	8	0.169167			
Total	2.309167	11				

Hipotesa Pengujian :

Fhitung < Ftabel (0,05) sehingga H diterima dan tidak ada perbedaan bermakna antar formula.

BATCH 3

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	299.3	99.76667	0.023333
Column 2	3	301.2	100.4	0.13
Column 3	3	299.5	99.83333	0.343333
Column 4	3	301.1	100.3667	0.303333

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1.029167	3	0.343056	1.715278	0.24073	4.066181
Within Groups	1.6	8	0.2			
Total	2.629167	11				

Hipotesa Pengujian :

Fhitung < Ftabel (0,05) sehingga H diterima dan tidak ada perbedaan bermakna antar formula.

LAMPIRAN Y

UJI F KURVA BAKU

Uji Kesamaan Regresi (NaOH 0,1 N)

KONSENTRASI	ABSORBANSI	X^2	Y^2	XY
1,996	0,330	3,984	0,109	0,659
3,992	0,503	15,936	0,253	2,008
5,988	0,526	35,856	0,277	3,150
7,984	0,670	63,744	0,449	5,349
9,980	0,915	99,600	0,837	9,132
		219,121	1,925	20,297

REPLIKASI 2

KONSENTRASI	ABSORBANSI	X^2	Y^2	XY
2,084	0,202	4,343	0,041	0,421
4,168	0,404	17,372	0,163	1,684
6,252	0,584	39,088	0,341	3,651
8,336	0,790	69,489	0,624	6,585
10,42	0,928	108,576	0,861	9,670
		238,868	2,030	22,011

REPLIKASI 3

KONSENTRASI	ABSORBANSI	X^2	Y^2	XY
2,044	0,309	4,178	0,096	0,632
4,088	0,433	16,712	0,187	1,770
6,132	0,510	37,601	0,260	3,127
8,176	0,701	66,847	0,491	5,731
10,22	0,870	104,448	0,757	8,891
		229,787	1,791	20,152

	ΣX^2	ΣXY	ΣY^2	N	SSi	RDF
Regresi I	219,1209	20,2973	1,9247	5	1,8321	4
Regresi II	238,8681	22,0112	2,0304	5	1,9382	4
Regresi III	229,7865	20,1518	1,7914	5	1,7037	4
	687,7754	62,4603	5,7464		5,4740	

Ssc = 5,7464- (62,4603 : 687,7754) = 5,6556
F = ((5,6556 - 5,4740) : 3 – 1) : (5,4740 : 12) = 0,1991
F hitung < Ftabel 0,05 (2;12) 3,89

LAMPIRAN Z

UJI F KURVA BAKU

Uji Kesamaan Regresi (Dapar Fosfat PH 5,8)

KONSENTRASI	ABSORBANSI	X^2	Y^2	XY
2,02	0,181	4,080	0,033	0,366
4,04	0,309	16,322	0,095	1,248
6,06	0,436	36,724	0,190	2,642
8,08	0,566	65,286	0,320	4,573
10,10	0,720	102,010	0,518	7,272
		224,422	1,157	16,101

REPLIKASI 2

KONSENTRASI	ABSORBANSI	X^2	Y^2	XY
2,052	0,225	4,211	0,051	0,462
4,104	0,346	16,843	0,120	1,420
6,156	0,502	37,896	0,252	3,090
8,208	0,661	67,371	0,437	5,425
10,26	0,787	105,268	0,619	8,075
		231,589	1,479	18,472

REPLIKASI 3

KONSENTRASI	ABSORBANSI	X^2	Y^2	XY
2,051	0,192	4,207	0,037	0,394
4,103	0,390	16,835	0,152	1,600
6,155	0,486	37,884	0,236	2,991
8,207	0,652	67,355	0,425	5,351
10,25	0,819	105,063	0,671	8,395
		231,343	1,521	18,731

	ΣX^2	ΣXY	ΣY^2	N	SSi	RDF
Regresi I	224,4220	16,1014	1,1571	5	1,0853	4
Regresi II	231,5887	18,4721	1,4786	5	1,3989	4
Regresi III	231,3426	18,7310	1,5210	5	1,4401	4
	687,3533	53,3045	4,1568		3,9243	

Ssc = 4,1568- (53,3045 : 687,3533) = 4,0792
F = ((4,0792 - 3,9243) : 3 – 1) : (3,9243 : 12) = 0,2368
F hitung < Ftabel 0,05 (2;12) 3,89